

REMARKS

Upon entry of this Amendment, claims 1-11 and 13-32 remain in this application.

The Office Action of March 26, 2002 has been received and carefully considered. In response thereto, this Amendment is submitted. It is respectfully submitted that, by this Amendment, all bases of rejection and objection are traversed and overcome. Reconsideration is, therefore, respectfully requested.

Claims 2-5 and 12 currently stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claims 2-5 have been amended to address the antecedent basis problem noted. With regard to claim 12, it is respectfully submitted that "harshness" is a term of art in acoustic and vibration industry which pertains to transient or passing shock waves. The Examiner's attention is directed to material appended hereto available on the website "NVHmaterials.com" last modified July 2000 which discusses this fact. Thus, it is submitted that the term "harshness" when employed with noise and vibration is a term of art known to the skilled artisan. Thus, it is submitted that the Applicant's invention which employs this term particularly points out and distinctly claims the subject matter which the Applicant regards as the invention.

Claims 1-8, 10, 11, 13, 17, 18, 20 and 22-25 stand rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux, II, et al. (U.S. Patent No. 5,962,618). The Examiner indicates that Primeaux teaches an elastomer coating material for use on a substrate. The Examiner indicates that the elastomer would inherently dampen vibrations acting on the load of the railcar while it is in motion. The Examiner further states that the Primeaux reference teaches that the material is comprised of an amine-terminated polyether polyol and an isocyanate compound. It is the Examiner's position that, since this reference is applying the material to a large substrate such as a rail car and no means are taken to heat or cool the railcar, this reference reads upon applying the material to the substrate at ambient temperatures.

The Primeaux reference teaches a substance which can be applied to railcars as a coating material to protect appropriate surfaces. The material so applied is sufficient to withstand structural flex and the like. It is respectfully submitted that the Primeaux reference fails to teach or suggest the equivalence between structural flex, such as gross torsion, bend and the like, and transmitted vibration, noise and harshness conveyed through the substrate. It can be readily appreciated that structural flex, as would occur in large structures such as railcars, differs from the event generally referred to as noise, vibration and harshness. It is further submitted that the mere suggestion that a material can remain intact after repeated gross flex, as would occur in a railcar, does not teach or suggest that the material has the ability to attenuate noise, vibration and harshness transmitted through the substrate. The frequency of transmitted noise, vibration and harshness is a phenomenon distinct from flex. The ability of a coating material to withstand flex events without cracking does not indicate that the material would successfully dampen noise. Thus, it is submitted that it is inappropriate to infer that a reference which teaches a polyurea spray railcar lining protecting of the interior surface of a railcar from wear and damage would be useful in attenuating noise, vibration and harshness transmitted through a suitable substrate. It is respectfully submitted that the Primeaux reference fails to teach or suggest that the liquid material of the present invention would exhibit such vibrational dampening characteristics.

Claim 1 currently stands rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux, II. The Applicants' invention as set forth in claim 1 has been amended to more specifically define the invention. Claim 1 has been amended to specify that the cured material adhering to the substrate does so in a manner which attenuates vibration, noise and harshness transmitted through the substrate. It is respectfully submitted that the present invention as set forth in claim 1 is predicated upon the unexpected discovery that such materials could be employed to dampen vibration in a substrate. Without being bound to any theory, it is believed that the adhered and cured liquid material of the present invention forms an integral element with the substrate which works in concert with the substrate as a total dampening media. It is respectfully submitted that nothing in the Primeaux reference teaches or

suggests the need for such vibrational dampening. It is further submitted that nothing in the Primeaux reference teaches or suggests the desirability of employing a material in such a manner. Thus, it is submitted that the Applicants' invention as set forth in claim 1 as amended is not taught, anticipated or rendered obvious by the Primeaux reference.

Claims 2-8, 10 and 11 also stand rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux, II. Claims 2-8, 10 and 11 depend from independent claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 2-8, 10 and 11 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 1.

Claim 13 also stands rejected under 35 U.S.C. §102(e) as being anticipated by the Primeaux reference. The Examiner's position is that the amine-terminated polyether polyol taught by Primeaux are polyoxylene polymers. The Applicants' invention as set forth in claim 13 as amended is directed to a method for damping vibration of a substrate in which application of the liquid material occurs in a manner which produces a tight, well-defined application pattern in which the cured material adheres to the substrate in a manner which attenuates vibration, noise and harshness transmitted through the substrate. It is respectfully submitted that the Applicants' invention as set forth in claim 13 is not taught, anticipated or rendered obvious by the Primeaux reference. Attention is directed to the analysis previously set forth with regard to claim 1.

Claims 17 and 18 currently stand rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux. Claims 17 and 18 depend from independent claim 13 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 17 and 18 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 13.

Claim 20 stands rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux. The Applicants' invention as set forth in claim 20 is directed to a method in which the application occurs in a manner which produces a tight, well-

defined application pattern. The cured material adheres to the substrate in a manner which attenuates noise, vibration and harshness transmitted through the substrate. It is respectfully submitted that the Primeaux fails to teach or suggest this invention. The Examiner's attention is directed to the analysis previously set forth in conjunction with claim 1. Thus, it is submitted that the Applicants' invention as set forth in claim 20 is not taught, anticipated or rendered obvious by the cited reference.

Claims 22 and 23 also stand rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux. Claims 22 and 23 depend from independent claim 20 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 22 and 23 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 20.

Claim 24 currently stands rejected under 35 U.S.C. §102(e) as being anticipated by Primeaux. The Applicants' invention as set forth in claim 24 as amended is directed to a method for damping vibration in which application of the specified material occurs in a manner which produces a tight, well-defined application pattern in which the cured material adheres to the substrate in a manner which attenuates noise, vibration and harshness transmitted through the substrate. It is respectfully submitted that the Applicants' invention as set forth in claim 24 is not taught, anticipated or rendered obvious by the Primeaux reference for the reasons discussed previously in conjunction with claim 1.

Claim 25 stands rejected under 35 U.S.C. §102(e) as being anticipated by the Primeaux reference. Claim 25 depends from independent claim 24 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 25 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 24.

Claims 1-6, 8, 10, 11, 13, 14, 18, 20 and 22 currently stand rejected under 35 U.S.C. §102(e) as being anticipated by Xiao (U.S. Patent No. 6,153,709). It is the Examiner's position that the Xiao reference discloses a method for dampening vibration of a substrate comprising the steps of applying a coating mixture to a panel

of a vehicle. The coating comprises a blocked polyisocyanate and a polyol. It is taught that, when the polyol is of an amine-terminated polyether type, curing will exist at room temperature.

The Applicants' invention as set forth in claim 1 is directed to a method which includes the step of mixing at least two components to form a liquid material. The first component consists essentially of one amine-terminated polymer having an average molecular weight greater than about 1500 and an amine equivalent weight greater than about 750. The polymer is configured to form a polyurea compound. The second component consists essentially of at least one isocyanate compound. The resulting material cures substantially instantaneously upon application on the substrate. It is respectfully submitted that Xiao reference teaches a polyurethane material having cure rates which are typically between 20 and 30 minutes in duration. The cure rates are of such a duration that, in practical operation, the application of the material disclosed in Xiao necessitates that material application be followed by the application of heat, such as by oven curing or the like, before the substrate is further handled. In various assembly line processes, this requires that the process and line be strictly arranged such that application of the material disclosed in Xiao occurs only in regions immediately up stream of the oven curing or baking apparatus. It can be readily appreciated that a method which eliminates this constraint would be very advantageous. It is respectfully submitted that the Xiao reference fails to teach or suggest the use of polyureas as defined in the present invention which could dampen noise, vibration and harshness. It is further submitted that any discussion present in Xiao actually directs the skilled artisan away from the use of such materials by emphasis of polyurethane materials over polyurea materials employing amine-terminated compounds.

The Applicants' invention is predicated upon the discovery that the use of such amine-terminated polymers result in a substantially instantaneous cure rate. This is in contrast with the Xiao reference which teaches cure rate of 30-20 minutes and up to 60 minutes and particularly teaches the application of heat to accomplish curing. The material disclosed in Xiao is a polyurethane. In contrast, the material of the present invention is a polyurea. For these reasons, it is submitted that the

Applicants' invention as set forth in claim 1 is not taught, anticipated or rendered obvious by the cited reference.

Claims 2-6, 8 and 10 also stand rejected under 35 U.S.C. §102(e) as being anticipated by Xiao, et al. Claims 2-6, 8, 10 and 11 depend from independent claim 1 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 2-6, 8, 10 and 11 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 1.

Claim 13 also stands rejected under 35 U.S.C. §102(e) as being anticipated by Xiao. The Applicants' invention as set forth in claim 13 is directed to a method for damping vibration of a substrate comprising the steps of mixing at least two compounds to form a liquid material. The first component consists essentially of at least one polyoxylene polymer. The second component consists essentially of at least one isocyanate compound. The first and second components react upon mixing to form a polyurea. It is respectfully submitted that the Xiao reference teaches and suggests a method for producing a polyurethane compound. It is further submitted that the reference fails to teach or suggest that a polyurea could be employed to function as a material which dampens noise vibration and harshness.

It is further submitted that the Xiao reference teaches a material which cures in an interval of 20-30 minutes and up to 60 minutes and, particularly, requires the application of heat to affect curing. In contrast, the Applicants' invention as set forth in claim 13 teaches a material which cures substantially instantaneously upon application to the substrate. It is respectfully submitted that the Xiao reference fails to teach or suggest such instantaneous cure rates. For these reasons, it is submitted that the Applicants' invention as set forth in claim 13 is not taught, anticipated or rendered obvious by the cited reference.

Claims 14 and 18 also stand rejected under 35 U.S.C. §102(e) as being anticipated by Xiao. Claims 14 and 18 depend from independent claim 13 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 14 and 18 are not taught, anticipated or

rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 13.

Claim 20 also stands rejected under 35 U.S.C. §102(e) as being anticipated by Xiao. Claim 20 is directed to a method for damping vibration of a substrate in which two components are mixed to form a liquid material which is applied to the substrate at an ambient temperature and cures substantially instantaneously upon application. The first component consists essentially of at least one amine-terminated polyoxylene polymer and the second component consists essentially of at least one isocyanate compound having at least one NCO radical reactive with the first component to form a polyurea compound. It is respectfully submitted that the Xiao reference fails to teach or suggest a polyurea material. Furthermore, it is submitted that the Xiao reference fails to teach or suggest that the material is one which cures substantially instantaneously upon application to a substrate. For these reasons, it is submitted that the Applicants' invention as set forth in claim 20 is not taught, anticipated or rendered obvious by the Xiao reference.

Claim 20 also stands rejected under 35 U.S.C. §102(e) as being anticipated by the Xiao reference. Claim 22 depends from independent claim 20 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 22 is not taught, anticipated or rendered obvious by the cited reference for the reasons discussed previously in conjunction with claim 20.

Claims 14-16 and 19 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Primeaux. Claims 14-16 and 19 depend from independent claim 13 to contain all of the limitations found therein. It is respectfully submitted that the Applicants' reference is not taught, anticipated or rendered obvious by the Primeaux reference for the reasons discussed previously in conjunction with claim 13.

The status of claims 26, 27, 28 and 29 is not explicitly stated in the Office Action. However, it is inferred that these claims also stand rejected under 35 U.S.C. §103(a) as being rendered obvious by the Primeaux reference. Claims 26, 27, 28 and 29 depend from independent claim 24 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth

in these claims is not taught, anticipated or rendered obvious by the Primeaux reference for the reasons discussed previously in conjunction with claim 24.

Claims 21 and 30-32 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Primeaux in view of Xiao. Claim 21 depends from claim 20 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claim 20 is not taught, anticipated or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 20.

Claims 30-32 also stand rejected under 35 U.S.C. §103(a) as being rendered obvious by the Primeaux reference in view of Xiao. Claims 30-32 depend from independent claim 24 to contain all of the limitations found therein. By this dependency, it is submitted that the Applicants' invention as set forth in claims 30-32 is not taught, anticipated or rendered obvious by the cited references for the reasons discussed previously in conjunction with claim 24.

Claims 1-32 also stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 6,291,019B1. The Applicants acknowledge the current rejection under the judicially created doctrine of obviousness-type double patenting. The Applicants wish to defer the submission of a suitable Terminal Disclaimer in this matter until the resolution of other issues regarding the rejection of one or more of these claims and the evaluation of these claims with regard to the current rejection under the doctrine of obviousness-type double patenting.

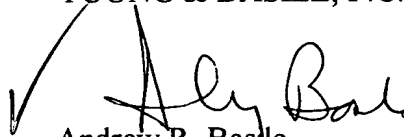
In summary, claims 1, 2, 3, 4, 5, 13 and 20 have been amended. Claim 12 has been deleted by this action. Additionally, arguments and analysis as to why the Applicants' invention as set forth in claims 1-11 and 13-32 is not taught, anticipated or rendered obvious by the cited reference has been presented in this Amendment. It is respectfully submitted that, in view of this analysis and the amendments to the claims, the Applicants' invention as set forth in claims 1-11 and 13-32 is in a condition



suitable for allowance. Notice of allowance is, therefore, respectfully requested.

Respectfully submitted,

YOUNG & BASILE, P.C.

A handwritten signature in black ink, appearing to read "Andrew R. Basile". The signature is written in a cursive style with a checkmark-like flourish at the beginning.

Andrew R. Basile  
Attorney for Applicant(s)  
Registration No. 24753  
(248) 649-3333

3001 West Big Beaver Rd., Suite 624  
Troy, Michigan 48084-3107

Dated: August 26, 2002  
ARB/DMG/jaf

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

1. (Amended) A method for damping vibration of a substrate comprising the steps of:
  - providing a substrate;
  - mixing at least two components to form a liquid material, wherein the first component consists essentially of at least one amine-terminated polymer having an average molecular weight greater than about 1500 and an amine equivalent weight greater than about 750; the polymer to form a polyurea compound present in an amount sufficient to impart a predetermined amount of tensile strength, hardness and flexibility, and the second component consists essentially of at least one isocyanate compound, the first and second components reacting upon mixing the polyurea compound curing substantially instantaneously upon application; and
    - applying the liquid material to the substrate at ambient temperature[.];
    - wherein the application occurs in a manner which produces a tight, well-defined application pattern, the material curing substantially simultaneously upon application and adhering to the substrate in a manner which attenuates vibration, noise and harshness transmitted through the substrate.
2. (Amended) The method as defined in claim 1 wherein the ambient [environment has a] temperature [ranging] ranges between about 35°F (1.7°C) and about 160°F (71.1°C).
3. (Amended) The method as defined in claim 2 wherein the ambient [environment has a] temperature [ranging] ranges between about 50°F (10°C) and about 120°F (48.9°C).
4. (Amended) The method as defined in claim 1 wherein [the] the substrate is applied at an ambient [environment has a] pressure ranging between about 730 mm Hg and about 800 mm Hg.

5. (Amended) The method as defined in claim 4 wherein the substrate is applied at an ambient [environment has a] pressure ranging between about 750 mm Hg and about 780 mm Hg.

Please delete claim 12 without prejudice.

13. (Amended) A method for damping vibration of a substrate comprising the steps of:

providing a substrate;

mixing at least two components to form a liquid material, wherein the first component consists essentially of at least one polyoxylene polymer present in an amount sufficient to impart a predetermined amount of tensile strength, hardness and flexibility, and the second component consists essentially of at least one isocyanate compound, the first and second components reacting upon mixing to form a polyurea; and

applying the liquid material to the substrate at ambient temperature[.];

wherein the application occurs in a manner which produces a tight, well-defined application pattern, the cured material adhering to the substrate in a manner which attenuates vibration, noise and harshness transmitted through the substrate.

20. (Amended) A method for damping vibration of a substrate comprising the steps of:

providing a substrate;

mixing at least two components to form a liquid material, the first and second components reacting upon mixing;

wherein the first component consists essentially of at least one amine terminated polyoxylene polymer present in an amount sufficient to impart a predetermined amount of tensile strength, hardness and flexibility, and the second component consists essentially of at least one isocyanate compound having at least one-NCO radical reactive with the first component to form a polyurea compound; and

applying the liquid material to the substrate at ambient temperature, the liquid material cures substantially instantaneously[.];

wherein the application occurs in a manner which produces a tight, well-defined application pattern, the cured material adhering to the substrate in a manner which attenuates vibration, noise and harshness transmitted through the substrate.

24. (Amended) A method for damping vibration of a substrate, the substrate being at least one of a metal stamping, a body in white, carbon graphite composites, fiberglass, polycarbonates, ABS, and structural polymeric materials, the method comprising the step of:

applying substantially organic a liquid material by at least one of spraying, dipping and brushing onto the substrate in an ambient environment, the ambient environment having a temperature ranging between about 35°F (1.7°C) and about 160°F (71.1°C), wherein, after application to the substrate, the material cures in an interval ranging between about 15 seconds and about 20 seconds;

wherein the substantially organic liquid material consists essentially of:

a first component, consisting essentially of at least one polymer present in an amount sufficient to impart a predetermined amount of tensile strength, hardness and flexibility; and

a second component, consisting essentially of at least one isocyanate compound and is reactive with the first component;

wherein the application occurs in a manner which produces a tight, well-defined application pattern, the cured material adhering to the substrate in a manner which attenuates vibration, noise and harshness transmitted through the substrate.